

Amendments to the Specification:

Please amend the Abstract as follows:

The present invention is a method for improving ~~and the system for analyzing and optimizing~~ resource allocation comprising the steps of identifying at least one criteria; Identifying sets of information wherein each set of information includes a unique unit of analysis (UOA-ID), a calendar/clock time (CCT), a CATVAR and a VAR Value; grouping each UOA-ID into an appropriate specific population (Type); identifying a Start Time wherein each UOA-ID has met said at least one criteria; forming at least one prospective or retrospective Cohort time segment for each UOA-ID based on their Start Time; placing the UOA-ID into the appropriate time segment; calculating an eligibility score for each UOA-ID for each time segment; calculating an Eligible Adjusted Variable Value; and generating an at least one Output Expression that can be subdivided by each CATVA by transforming economic and eligibility information produced over calendar/clock time (CCT) per a unique unit of analysis (e.g. UOA-ID) that meets the criteria for inclusion into a specific Population (Type) into information organized by Cohort Time and summarized across all UOA-IDs that are part of the same Population. An Eligible Adjusted Variable Value (EAV) can be calculated for each time segment and summarized across all the UOA-IDs to enable one to estimate resources that can be allocated per UOA-ID per Cohort time segment per CATVAR to reach a defined outcome based on a defined return on resource allocation estimate.

On page 1, please amend the paragraph starting at line 10 and ending at line 14 as follows:

The present invention related to a method and system for allocating resources to achieve specified outcomes and, more particularly, to a method and system for analyzing data for allocating resources over time ~~as experienced by~~ for defined populations to achieve specified outcomes to best serve a business' goals.

On page 1, please amend the paragraph starting at line 15 and ending on page 2, line 9 as follows:

Managing a business or an organization in a manner that creates long term value is a complex activity. Further, every business or organization has limited resources and the need for business to accurately monitor their costs and justify resource allocation to achieve specified outcomes in a further calendar time period (e.g. financial quarters) is becoming increasingly important. Unfortunately, the task or organization business information to determine proper resource allocation is often extensive and troublesome to organize and it is often difficult or impossible for business managers to use this information to make proper decisions. Accordingly, businesses and other organizations typically either overspend their resources or do not avail themselves to for statistical data and analysis that can be used to optimize their resource expenditures. For example, business establishments that serve a large number of customers generally have a problem analyzing their transactional

information to develop ~~profiles~~ trends in defined population over time. Such ~~profiles~~ trends are desirable to effectively target and determine the effectiveness of various programs for the purposes of optimizing resource allocation to achieve specified outcomes over designed time periods. Further, while it may be known that certain cost reduction programs are hypothesized to be effective to reduce future costs, a need exists for an effective and scientific method and system for optimizing resource allocation that can be shown to likely achieve specified outcomes over time to maximize a business's investment.

On Page 3, please amend the paragraph starting at line 6 and ending at line 17 as follows:

Recently, the optimization of resource allocation has been particularly important for businesses engaged in the healthcare industry. Due to significant increases in health care costs, health care providers and service management organizations have become under increased pressure by customers to find ways of lowering, or at least slowing, the rate of growth of health care costs. As a result of such pressure, health care providers have implemented numerous population-based programs, such as wellness programs, disease management programs, and other health-inducing and cost-reduction programs, designed to improve the overall health of the population thereby reducing, at least theoretically, overall health care costs. Such health care organizations, however, are in need of a system that can qualitatively better understand the performance of programs ~~various strata~~ and also analyze program performance in order to optimize allocation of health care services

and expenditures over time to achieve specified outcomes.

On Page 3, please amend the paragraph starting at line 18 and ending on page 4, line 10 as follows:

Currently, such as in health care an “individual unit” with a certain characteristic that makes it eligible for inclusion in a defined population, is entered into the population at a certain “start time” (clock or calendar time) and remains “eligible” for this population during a known and quantifiable duration of time. Furthermore, this population has a greater than zero probability of experiencing some event at a future time period, an event with some economic value attached to it. This event, the “individual unit,” the date of the event, and the “cash value” of such event is captured by a transaction system. In addition, categorical or stratifying variables are also captured by this transactional system or can be inputted from other systems (e.g. health risk assessments, or electronic medical records) and the entire defined population can be subdivided to learn where the most optimal opportunity lies. For example, look at the cohort time trends of a defined population with congestive heart failure when subdivided by a fixed categorical variable: Gender. We may find that all other things being equivalent (e.g. age, # of comorbidities, etc.) females have higher resource expenditure than males and the expected absolute percent change following an intervention would be higher in females than in males. Thus, the female category would be considered a higher opportunity to target, thus, the invention could allocate resource where they

would do the most good.

On Page 4 please amend the paragraph starting on line 11 and ending on page 5 line 1 as follows:

The same concept can be seen with a categorical variable that is dynamic (CATVAR-dynamic) like the date that a 30 day prescription is filled. Say, we have 6 time segments of 30 days each. There are three general possibilities over these 6 times segments made of “0s” for Not filled and “1s” for filled for six different time segments each represented by an integer place holder (this assumes ~~assume~~ no missing information, that is also a possibility that this invention can accommodate). The Rx is filled for all six time segments (111111), the Rx is filled for no time segments (000000), the Rx is filled for some time segments and not for others (e.g. 010101 or 101010 or 000001 or 100000 etc). The final stratification could be three fold, for example: those who were compliant ~~complaint~~ for all six times segments, vs. those where were partially compliant ~~complaint~~ vs. those what were not compliant ~~complaint~~ at all (there are numerous other possibilities). If the output revealed a similar outcome from the fully compliant ~~complaint~~ to the partially compliant ~~complaint~~ but a worse outcome for the non-compliant ~~non-complaint~~ this would provide empirical support for ~~of~~ an initiative to ~~complaint~~ to take medication vs. intervention to get the partially compliant ~~complaint~~ fully compliant ~~complaint~~.

On Page 5 please amend the paragraph starting on line 2 and ending on line 6 as follows:

The method and apparatus transforms this information into usable estimates for of resource allocation needed to achieve specified outcomes. Accordingly, a need exists exist for an improved method and system to qualitatively analyze cost reduction programs and for analyzing information for allocating resources to best serve a business' goals and then optimize such resource allocation.

On Page 5 please amend the paragraph starting on line 20 and ending on line 22 as follows:

In another preferred embodiment of the invention the method of analyzing resource allocation further includes the step of transforming the Output Expression from being expressed in Cohort time segments to being expressed in CCT segments.

On Page 9 please amend the paragraph starting on line 11 and ending on page 10, line 3 as follows:

The system software 104 ~~402~~ is a computer-readable medium having computer-readable instructions for performing the method of optimizing resource allocation. Preferably, the system software 104 ~~402~~ is an interactive, menu and

event driven system that uses prompt, dialog, and entry windows to guide a user to enter information. As used herein, the term “software” refers to any form of programmed machine-readable language or instructions (e.g., object code) that, when loaded or otherwise installed, provides operating instructions to a machine capable of reading those instructions, such as a computer. The system software **104 102** of the present invention can be stored or reside on, as well as be loaded or installed from, various software input devices **112** such as one or more floppy disks, CD ROMS disks, hard disks or any other form of suitable non-volatile electronic storage media. The system software **104 102** can also be installed by downloading or other form of remote transmission, such as by using Local or Wide Area Network (LAN or WAN)-based, Internet-based, web-based or other remote downloading or transmission methods. Upon a user’s entry of appropriate initialization commands entered via the input device **108**, the system software **104** is read by the central processing unit **102** and the method of the present invention for optimizing resource allocation is implemented.

On Page 10, please amend the paragraph starting on line 4 and ending on page 11, line 11, as follows:

Referring to **FIGS. 1, 2 and 3**, a flowchart illustrating the overall structured methodology and design of the system software **104** of the present invention is shown. In a preferred embodiment of the invention, a set of information comprising

the unit analysis (“UOA”), the identification of their particular UOA (“UOA-ID”), the Type, and the calendar clock date/time (“CCT”) are identified (**step 1**) **200** by the system user (not shown) is stored in the information data bank, as represented by Table 1, within the memory **106** of the CPU **102**. As used herein, the term “Unit of Analysis” means the basic or minimum analytical unit that is to be examined using the method and system of the present invention. The term “UOA-ID” means the particular individual UOA entity involved in the study. For example, in the retail industry, the UOA can be, but are not limited to, an individual person, an individual product line, individual type of person, store type or a section of a store, office type, etc. For the health care industry for example, the UOA can be, but are not limited to, patients having a common diagnosis or condition, medical offices, hospital units, hospitals, etc. Preferably, the UOA will be the most basic analytic unit that can be supported by the known information. The “UOA-ID” can include, but are not be limited to, an individual product, an individual person, an individual store, office, etc. For the health care industry for example, the UOA-ID can include, but are not limited to, an individual patient, medical office, hospital, or hospital unit. As used herein, the term “Type” means an event or action that operates as a trigger whereby such that when the UOA-ID meets a given ~~criterion~~ criteria for inclusion it is included into a specific Population ~~population~~. Thus, “Type” refers specifically to the variable that will be used to direct the UOA-ID into a defined Population. For example, “Type” can include, but is not limited to, a specific diagnosis, or the performance of a specific procedure. CATVAR refers to “Categorical Variable” and

can be of two types “fixed” or “dynamic.” A fixed CATVAR (termed “CATVAR-F”) is a variable associated with a UOA-ID that does not change over some designated CCT period. The duration of CCT can be as wide as a lifetime (e.g. gender) or simply a CATVAR that does not likely change during the “Study Time” of interest (i.e., the calendar (or clock) time of interest (e.g., the year 2110, February 15 to March 14, 1:00 A.M. to 1:15 A.M. on April 3, 2001, etc.); an example would be the state of residence. A dynamic CATVAR (termed CATVAR-D) is one that can take theoretically on different values per any given time segment. An example of this is filling a prescription in any given time segment, it could be filled or not filled.

On Page 11, please amend the paragraph starting on line 12 and ending on line 14 as follows:

As used herein, the term “Population” means a defined set comprising at least two or more UOA-IDs that ~~meets~~ meet an the eligibility criteria (e.g. Type) selected for inclusion into the set Population.

On page 12, please amend the paragraph starting on line 5 and ending on line 17 as follows:

After entering the information in step 1 **200**, the user also identifies and enters the particular Type to be used to group each UOA. The system software **104**

then operates (step 2) 202 to group each UOA-ID into an appropriate “Grouper” (This could be equivalent to a Type or could be derived from an algorithm that turns “many” into “few” ~~many (Type) to few algorithm~~) which, as represented in Table 2, is then stored in separate Grouper “K” data files in the information data bank. “Grouper” algorithms that can be utilized by the software 104 to turn “many” into “few” are well known and can be proprietary, public, or custom built. For example, UOA-IDs, such as brands of like products (e.g. brands of toothpaste), can be grouped into a generic Grouper called “toothpaste.” UOA-IDs, such as brands of cereal can be grouped into a generic Grouper called “cereal” or may be further grouped according to the size of the box of the cereal. In the health care industry, UOA-IDs, such as the 10,000+ codes used by health care providers on transaction/claim forms (ICD-9 codes) can be grouped into Groupers of genus and species type classification.